

REMARKS/ARGUMENTS

Claims 1-9 and allowed Claim 10 and new Claims 11-23 are active in the case.

Reconsideration is respectfully requested.

The present invention relates to a method of removing nitrogen-containing dyes from wastewater.

Specification Amendment

The specification has now been provided with a new abstract as requested in the form of an attachment to the present response.

As to the matter of the missing letters from words within the text, it is noted that the copy of the text in applicants' file does not contain such letter omissions. Accordingly, the omissions observed by the Examiner must have occurred in the Patent Office when the copy of the application filed was scanned electronically in the system of the Patent Office.

Accordingly, in order to resolve this matter, applicants are enclosing a copy of the specification in their file for consideration by the Examiner. This copy of the text should resolve the missing letters issue raised by the Examiner.

Applicants have amended page 7 to correct the highlighting issue by supplying the covered over two sentences of text. Further, pages 4 and 6 of the text have been amended to correct minor errors therein. Entry of the amendments to the text is respectfully requested.

Drawings

The text of the application in the paragraph bridging pages 12 and 13 has been amended in order to obviate the issue raised with respect to the numbers 2' and 7'. In fact, the alternative processing of the remaining portion of nitrified wastewater is described simply in terms of successive denitrification in a tank and re-aeration of the denitrified wastewater in

another tank. This explains the treatment in sufficient detail and overcomes the issue that has been raised. Entry of the amended paragraph is respectfully requested.

Claim Rejection, 35 USC 112, second paragraph

The issue raised with respect to Claim 2 is believed to be obviated by the amendments made to the claim. In Claim 1, upon which Claim 2 depends, the order of the three tanks is not specified. It is believed that the amendments to Claim 2, however, clarify that an embodiment of the apparatus of Claim 1 is a specific sequence of tanks that is established in the order of the obligatory anaerobic tank, the denitrification tank and the nitrification tank. Thus, Claim 2 is narrower than Claim 1. Accordingly, the issue raised on non-reference grounds is believed obviated and withdrawal of the same is respectfully requested.

Claim Amendments

The texts of Claims 1-8 have been amended in order to clarify the language of each claim and to make editorial changes to each of the claims. Claim 1 has been additionally amended to include the limitation of the conditions under which the anaerobic tank is operated, and thereby define the type of anaerobic tank, as these conditions are disclosed in the paragraph of lines 5-8 of page 7 of the text. Accordingly, the amendments made to Claim 1 do not introduce new matter into the case.

Claim 10 has been amended in order to cast the language of the claim into conventional process or method language format. None of the amendments that have been made introduce new matter into the claim.

New Claims 11-23 are supported by the original claims. Of course, the subject matter of the new claims is cast into process language form. The two broad generic process claims that are presented are allowed Claim 10 and new Claim 17. In fact, new Claim 17 is based on

the three process of Claim 10 and further contains a wastewater recirculation step which is consistent with the subject matter in the original claims. Accordingly, entry of the new claims and amendments into the record is respectfully requested.

Prior Art Rejection

Claims 1, 2 and 3 stand rejected based on 35 USC 102(b) as anticipated by Mulder, U. S. Patent 4,384,956. This ground of rejection is respectfully traversed.

The Mulder patent discloses a method of purifying waste water and/or waste water sludge in an apparatus that comprises a first methane fermentation step, then a denitrification step and concluded with an oxidation step. Figure 2 of the patent discloses an apparatus set-up of an anaerobic fermentation reactor, a denitrification reactor and then an aerobic reactor. However, the patent nowhere shows or suggests an apparatus and a method of processing a wastewater that contains a nitrogen-containing dye, and certainly not a combination of a treatment in an obligatory anaerobic tank, a nitrification tank and a denitrification tank. Further, the patent certainly does not teach or suggest the specific anaerobic tank as defined in the presently amended claim which must be operated under the condition of a redox potential in a liquid, if this potential is used as an index, of usually -200 mV or less when the pH of the liquid is 7. It is therefore clear that the patent does not anticipate the invention as claimed and withdrawal of the rejection is respectfully requested.

Claims 1-4 stand rejected based on 35 USC 102(b) as anticipated by Hoffland et al, U. S. Patent 6,054,044. This ground of rejection is respectfully traversed.

The Hoffland et al patent discloses a method and apparatus for the treatment of wastewater that is obtained from livestock production such as the maintenance and processing of hogs. Hoffland et al discloses a method of treating the manure of hogs by anaerobic digestion of the organic refuse of hogs and the conversion of ammonia to nitrate, as

well as the denitrification of nitrate to nitrogen. However, nowhere does the reference mention a means and method of processing wastewater by that contains a nitrogen-containing dye, and certainly does not describe a combination of an obligatory anaerobic tank, a nitrification tank and a denitrification tank for the treatment of the dye. Indeed there is no teaching or suggestion anywhere of an anaerobic device which must be operated under the condition of a redox potential in a liquid, if this potential is used as an index, of usually -200 mV or less when the pH of the liquid is 7. It is therefore clear that the patent does not anticipate the invention as claimed and withdrawal of the rejection is respectfully requested.

Claims 1, 2, 4, 5 and 7-9 stand rejected based on 35 USC 102(b) as anticipated by Tanaka et al, U. S. Patent 6,007,712. This ground of rejection is respectfully traversed.

The Tanaka et al patent discloses a method and apparatus for the treatment of wastewater that is produced in the farming of livestock, wastewater produced from domestic sources, urban sewage and wastewater from the farming of fish. In an embodiment of the apparatus that is used for the treatment of wastewater, a wastewater is processed in an anaerobic tank and then thereafter in a denitrification tank and a nitrification tank. Thus, although the elements of an anaerobic digestion device, a denitrification tank and a nitrification tank are disclosed, there is no teaching of the specific treatment of wastewater by that contains a nitrogen-containing dye. Moreover, there is no teaching or suggestion anywhere of an anaerobic device which must be operated under the condition of a redox potential in a liquid, if this potential is used as an index, of usually -200 mV or less when the pH of the liquid is 7. Accordingly, the apparatus system disclosed in the reference is not that which is presently claimed, and therefore the patent does not anticipate the invention as claimed. Withdrawal of the rejection is respectfully requested.

Claim 6 stands rejected based on 35 USC 103(a) as obvious over Hoffland et al, U. S. Patent 6,054,044 in view of Tanaka et al, U. S. Patent 6,007,712. It is clear from the

discussion above that none of the cited references teaches or suggests a method for the treatment of wastewater that contains a nitrogen-containing dye. Moreover, there is no teaching or suggestion anywhere of an anaerobic device which must be operated under the condition of a redox potential in a liquid, if this potential is used as an index, of usually -200 mV or less when the pH of the liquid is 7 which is positively recited in Claim 1 upon which Claim 6 depends. Accordingly, the apparatus system disclosed in the reference does not suggest the subject matter of Claim 6 and withdrawal of the rejection is respectfully requested.

It is believed that the application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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